

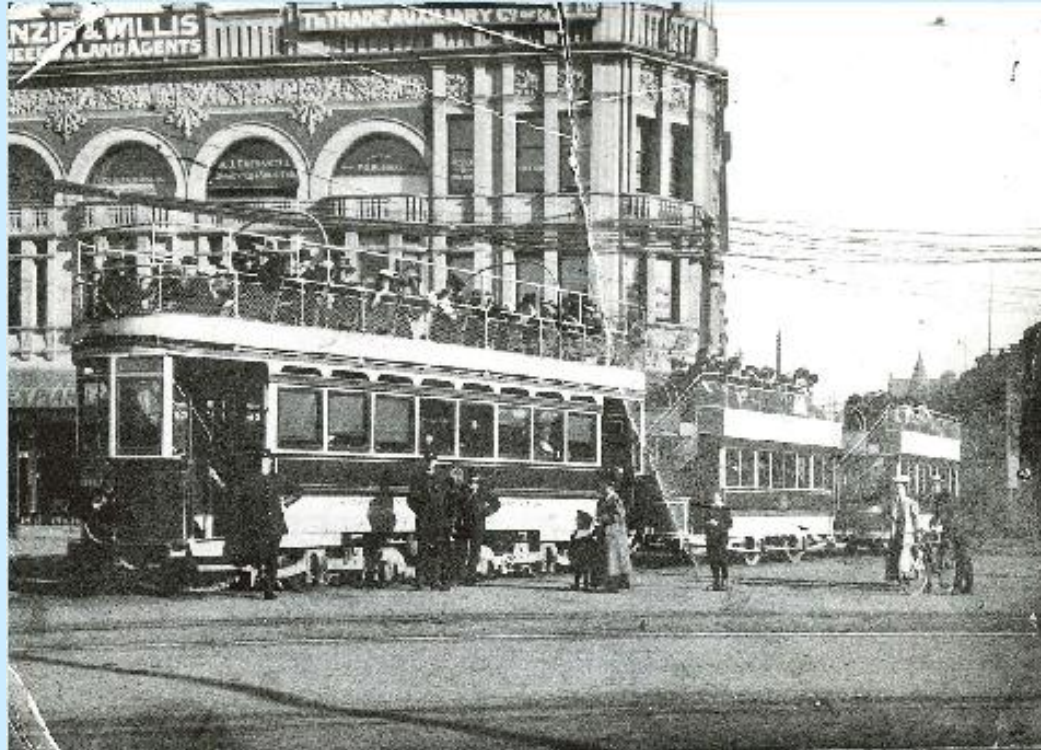
WHY DID WE DO IT? (THE WAY WE DID IT)



A look at some of the trials along
the way to the return of
Christchurch tramcar 26 to
service

The Tramway Historical Society
in its early years held a wish to
recover one of each class of tram
operated in Christchurch for
future restoration.

The Dream

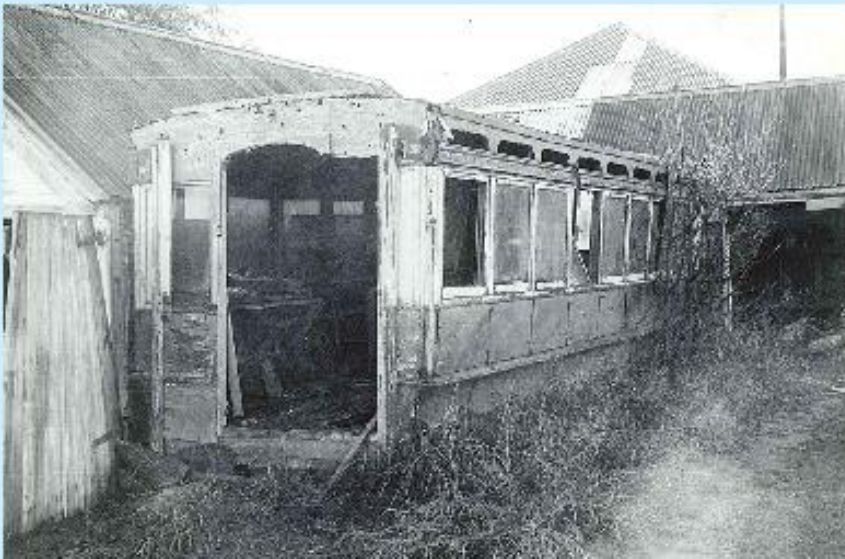


- To restore to operation an iconic Stephenson Double Deck Electric tram car

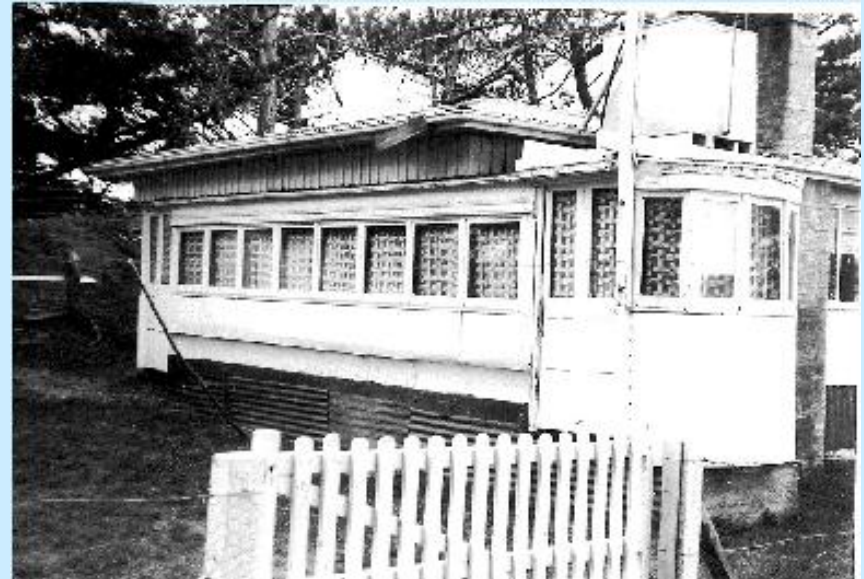
What could be found

- 24 at Tinwald near Ashburton in a poor state and considered unrestorable
- 26 at Hakatere near Ashburton with two thirds entombed in a bach
- 25 lost without any trace remaining

The options



- 24 at Tinwald



26 at Hakatere

The pictures said it all.
Tram 24 looked to be in much worse condition than 26 which had been partially entombed in the bach.



Spot the tram

Since 24 had been demolished, 26 had been modified reducing it to only two thirds of what had first been asked for.

In 1976 the owners agreed to part with the tram in return for the bach being rebuilt.

The job has started



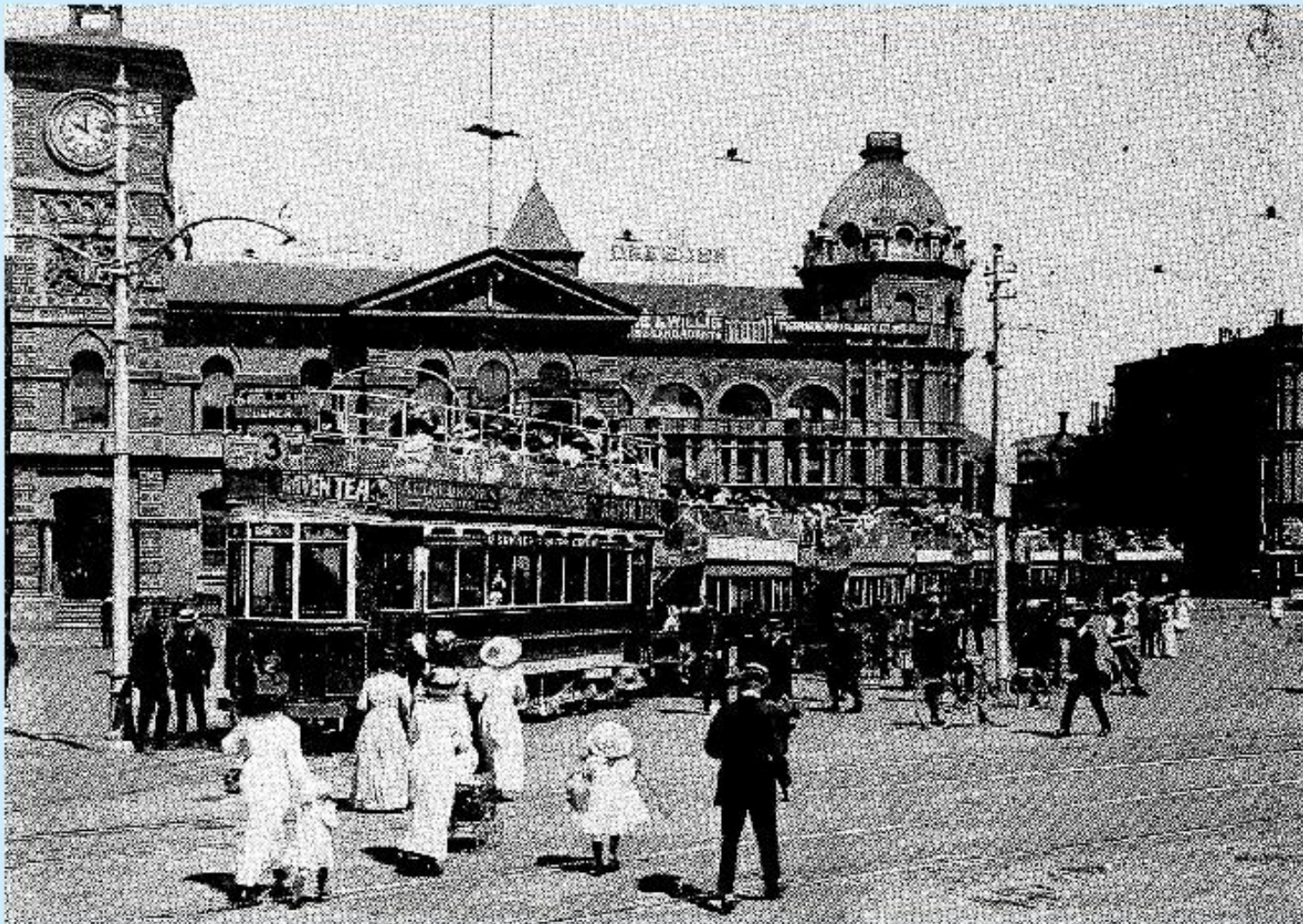
The ring leaders John Shanks and Douglas Johns contemplate what they have started



26 back home in Christchurch



Could we do this at Ferrymead?



Another loaded tram from the
archives fuels the dream



An artist's impression of what could be



Not a lot of tram left



Let's get on with it

- Take
- Two thirds of a tram body
- A grant for about 20% of the total cost
- One enthusiastic tram restorer
- A few extra helpers
- And you get
- A monster that is going to get out of control

Repairs to inner chassis rails later
to be completely replaced



Reinforced wooden chassis



Side pillars removed for repair



Repaired side pillars installed



1993 to 1995

Most efforts were going into restoration of trams for city tramway



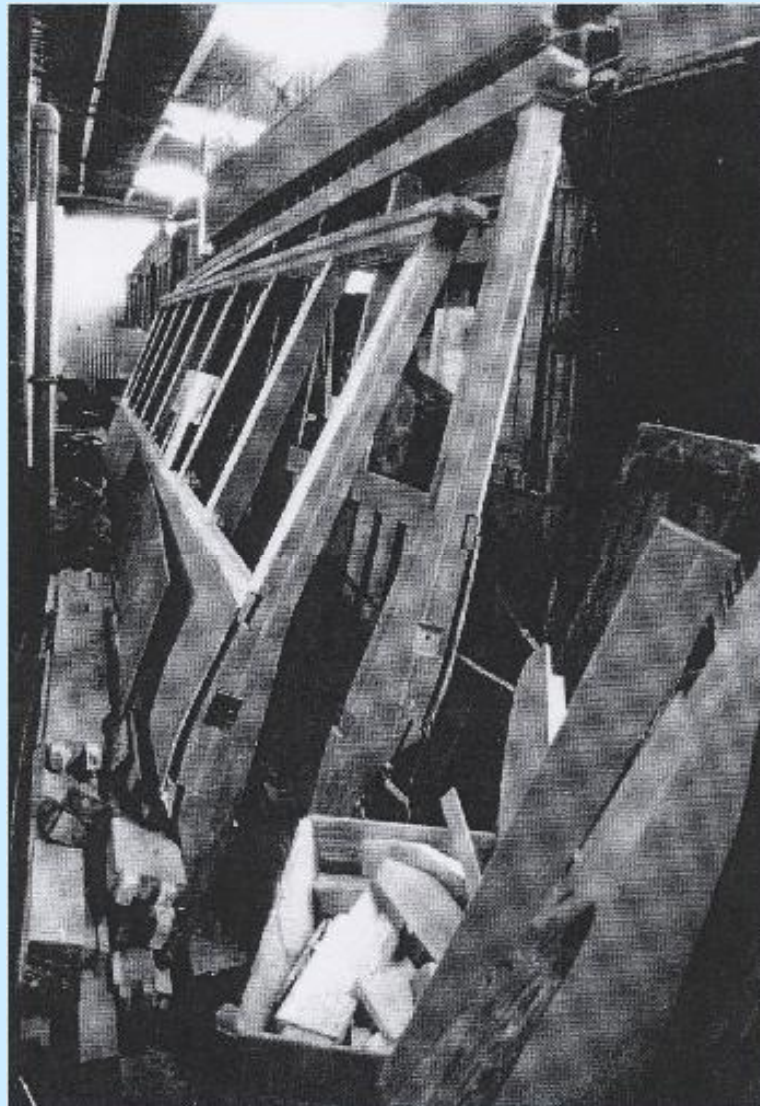
Barry Marchant assembles new
bulkhead of white pine later
replaced with American Ash



Considerable effort in the first instance by volunteers

- Repair of pillars
- Repairs to wooden chassis including additional steel reinforcing
- New bulkhead framed in white pine
- Trucks partially constructed for this project and reallocated to city tramway

26 packed up 1999



HTT focuses on Christchurch 1



A new Era of Restorations

- The Railways Act had tightened standards
- Possible city operation and mixing with traffic
- Patched up timber may not be good enough
- Detail and authenticity very important
- This isn't an amusement park ride
- Professional restorers raise the bar

Challenges in front of us

Planning still had not been undertaken and we were still moving forward based on a dream

Tender documents

CHRISTCHURCH TRAMWAY BOARD.

ELECTRIC TRAMWAYS.

SPECIFICATION.

SECTION F.

CAR BODIES.

1. The work covered by this Section shall include the manufacture, supply, delivery, erection, and mounting on trucks at the Car Shed, Falsgrave St., Christchurch, New Zealand, with all necessary accessories for equipping complete thirty electric car bodies and one electric sprinkler as specified below. All necessary dimensions for fastening to trucks are to be obtained by the Contractor from the truck manufacturer.

2. All the work done under this Section of the Specification is to be carried out in accordance with the General Conditions issued herewith, and dated September 25th, 1903.

LIST OF CAR BODIES.

3. The following list of car bodies are to be supplied:—

Ten (10) 4 wheel, No. 4. Open end. Closed body. Type as in Drawing No. 55.

Ten (10) Bogie No. 4a. Combination, closed end, type as in Drawing No. 56.

Three (3) 4 wheel, No. 4b. Box vestibule, type as in Drawing 57.

Six (6) Bogie No. 4c. Double deck, type as in Drawing No. 58.

One Bogie, No. 4d. Box baggage compartment, type as in Drawing No. 59.

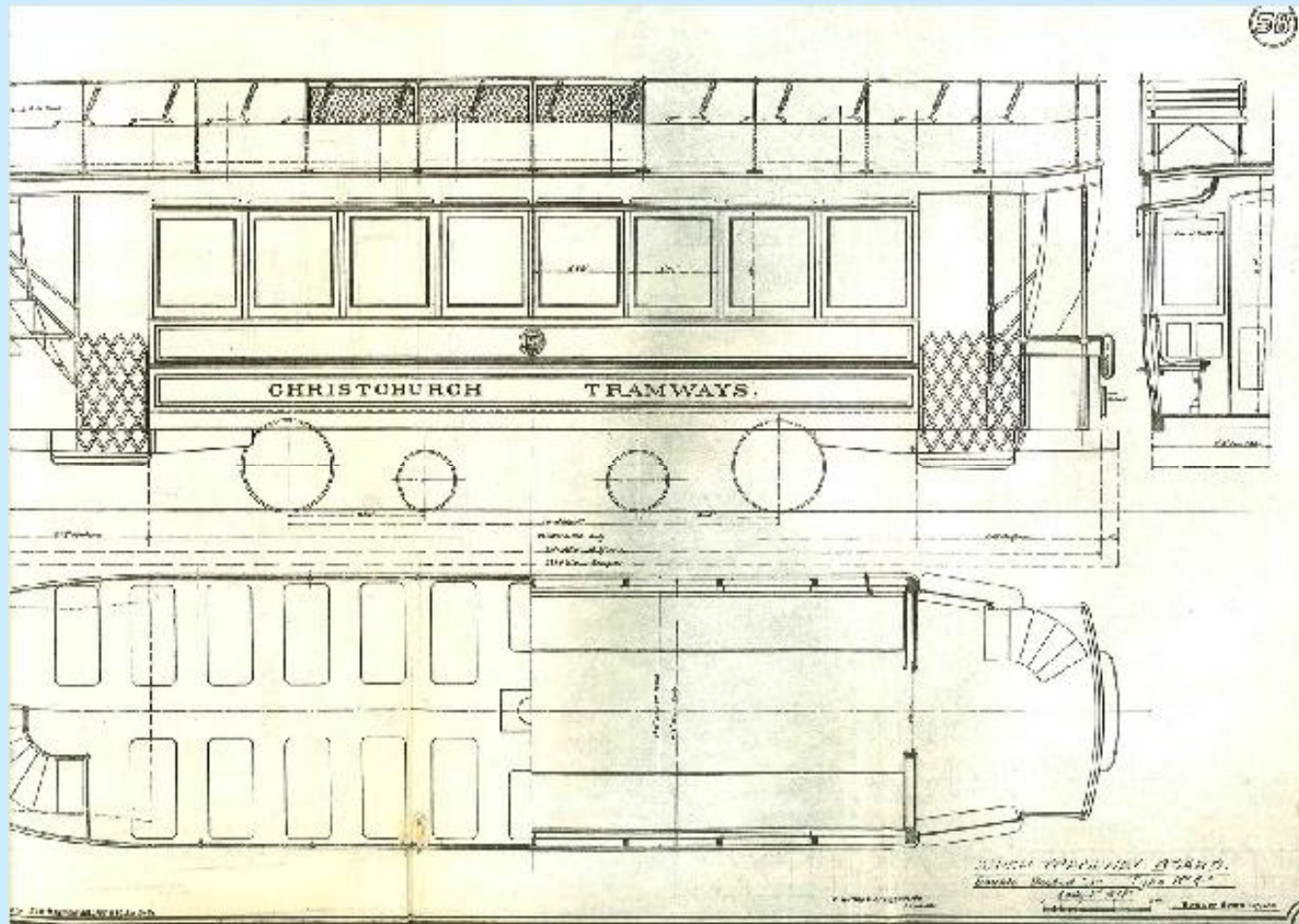
One 4 wheel No. 4e Track Sprinkler, Drawing No. 60.

3

DOUBLE DECK TYPE.

- 4c. (1) Length of car body outside, 21 ft. 10½ in.
Length of inside saloon, 21 ft.
Length of each platform, 5 ft. 3 in.
Length over bumpers, about 33 ft. 4½ in.
Extreme width of car not to exceed 7 ft. 6 in.
Clear height inside, 6 ft. 7 in.
Centres of driving wheels, 14 ft., about.
Wheel base, 4 ft.
Gauge of line, 4 ft. 8½ in.
Approximate weight of car body to be given.
- (2) These cars are to have spiral stairways as shown on Drawing No. 58.
- (3) All material and workmanship entering into the construction of these cars to be first-class in all respects.
- (4) General inside finish to be of mahogany.
- (5) For general construction these cars are to conform to specification of other cars attached.

Drawing from tender documents



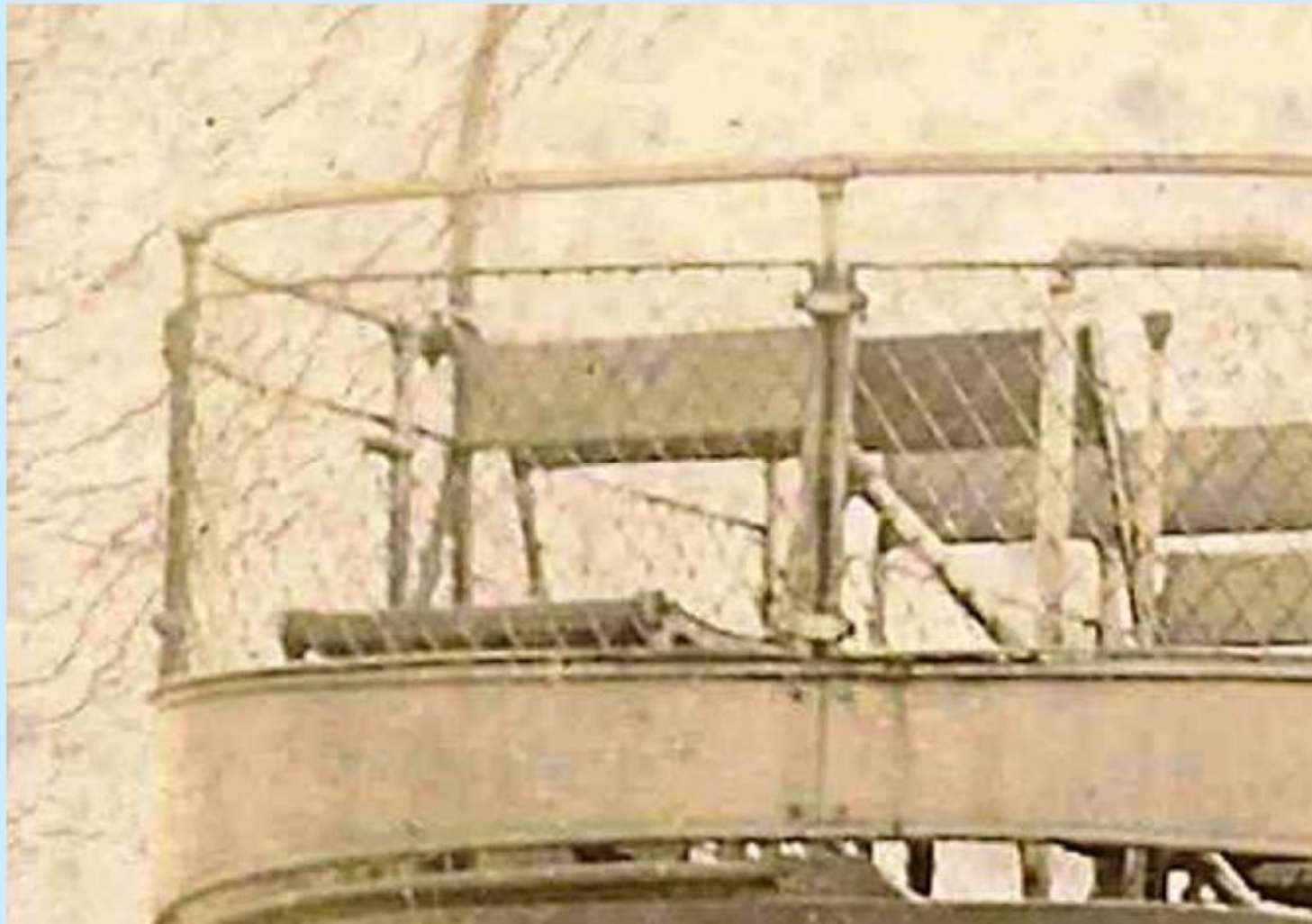
Postcard from Annette Sowman



Enlarge the photo to find detail



Blow it up bigger for finer detail



Have we answered all the questions

- What do we need ?
- How much will it cost?
- Where will we get the money?
- How long will it take?
- Can we have paid and volunteer staff working together?

No we don't have all the answers

What the heck we still have our
dream so let the HTT carry it on

Restoration Take Two

Replacing repaired timbers with new material



Graeme contemplates where to
from here



He must have figured it out



Recycling

- Our first set of trucks had been taken for 152 to start its new life in the city
- It's almost back to square 1
- 152's old trucks needed refurbishing to replace them
- These ones were never quite true so it is almost start again except for the casting

Reworked truck frame being assembled without jig



When it wouldn't go together right we
built the jig and sorted the errors



Awaiting motors and brakes



Assembled and ready to run



Assembled trucks out for a tow to check bearings



Road blocks



Stairs brought a few challenges

- Where do they start and finish?
- How many treads?
- Complex sheet metal cutting and rolling
- Handrail geometry
- Protective mesh guards
- Health and Safety issues!

Original platform with location of fittings marked





- Stairs mocked up in MDF

Assembled stair module ready for painting



Taking shape



Clerestory Window Glass

- Stephenson's used moulded patterned glass
- Salvaged stocks exhausted
- Modern supplies not available off shelf
- Volume required for viable manufacture
- Searching for alternatives maintaining character of original windows.

We found a craftswoman who
produced this



It gives the effect of the original



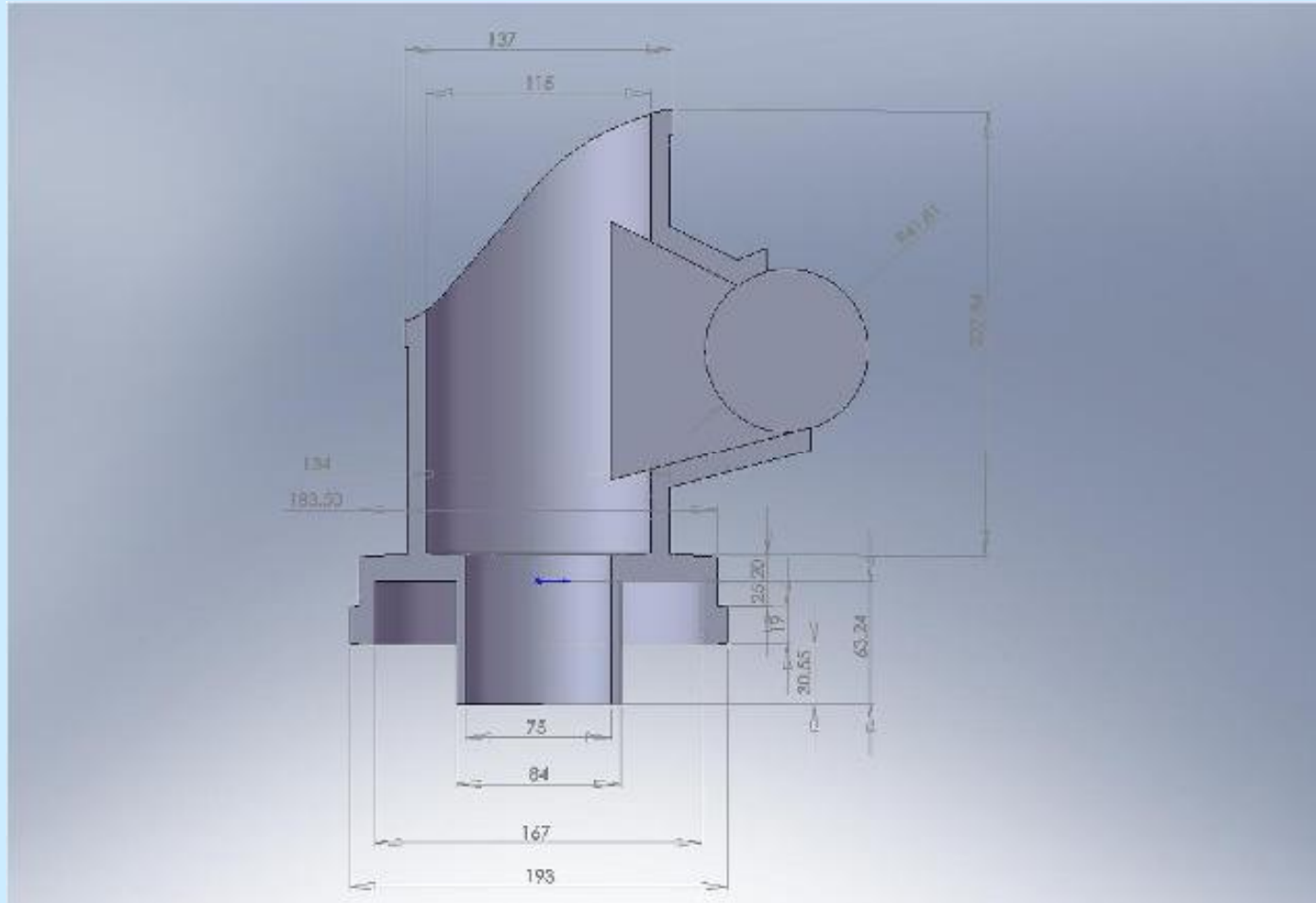
If only we could get a decent photo



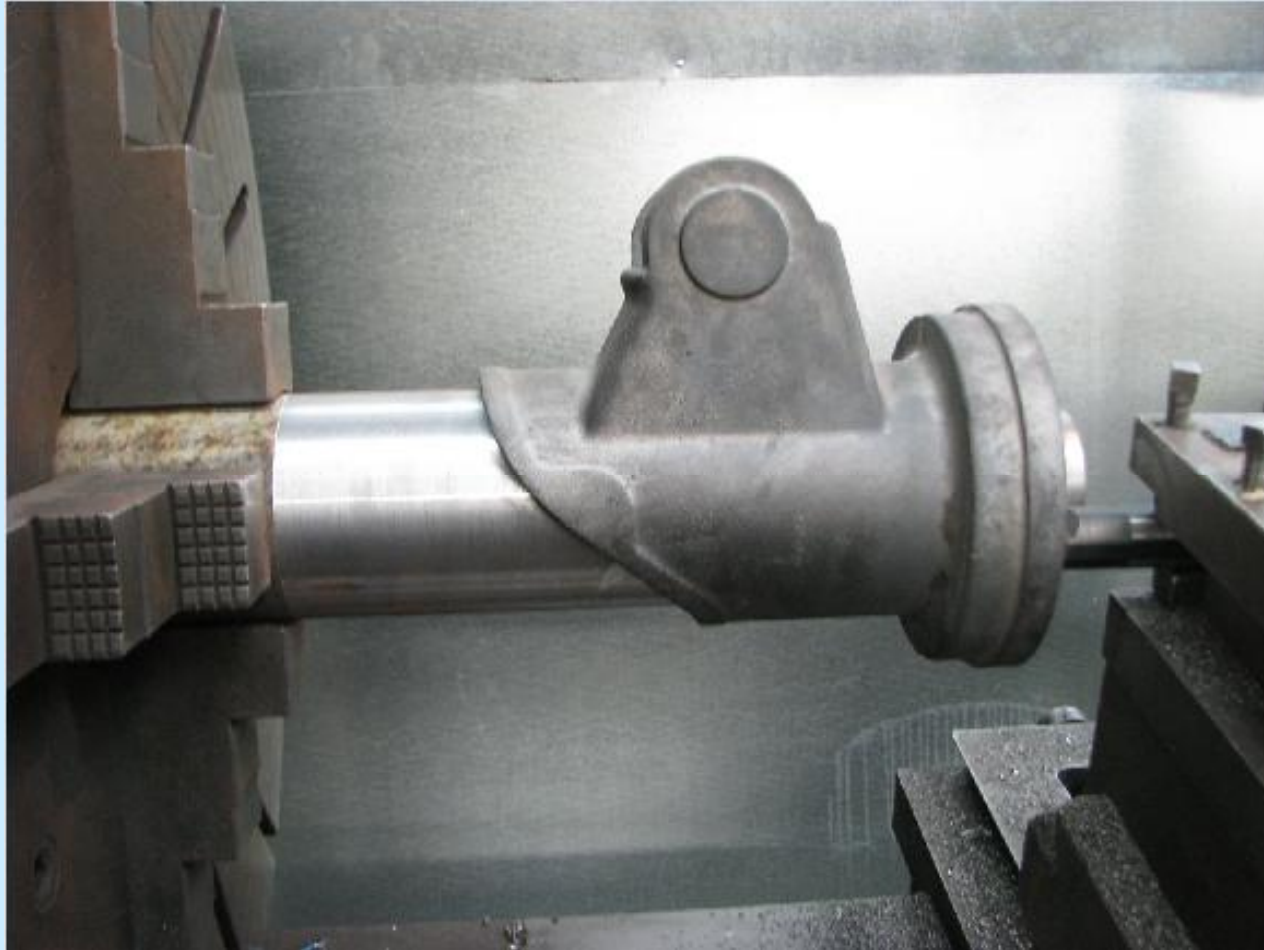
Trolley standard

- Where do you buy one of these in 2007
- BTH don't seem to have a catalogue any more
- There is one at Crich we could copy!
- Do they have any plans?
- Yes and we can get a copy
- Lets build it ourselves

Pattern makers drawing of trolley standard head for CNC production



The casting from the previous drawing



Raw casting of Trolley Standard base



John King machines the trolley standard



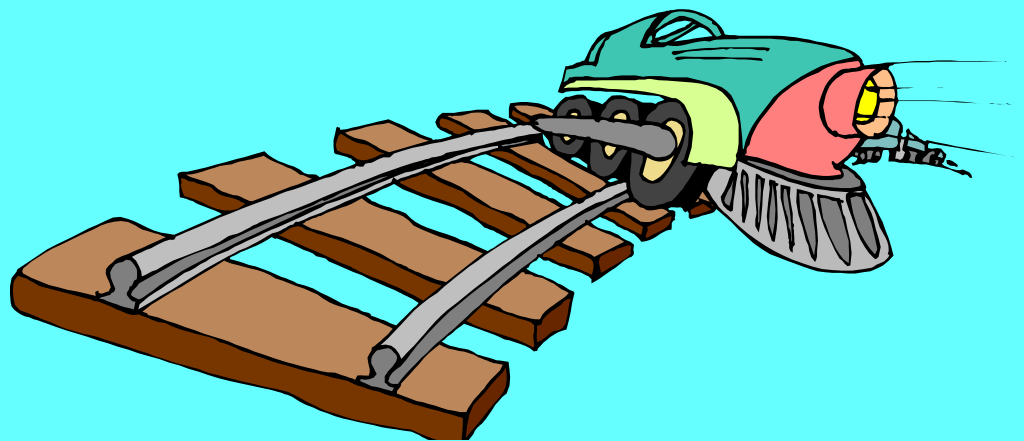
Brian is happy now the standard is
in place



Derailed

A week before commissioning and
we have a major braking issue.

Can we get through?



The new beam made in the last week by Lyttelton Engineering



Re-drill and now the brakes work



What did we learn from this?

- If you take enough time you can complete a major restoration of this scale.



**WHAT COULD
WE HAVE DONE
BETTER?**

Project Planning



Planning is essential to complete restoration in a timely fashion

What could have been planned?

- Who had heard of conservation plans in 1987?
- Starting with a firm vision of the period to be restored to
- A list of components needed to complete the restoration
- A work plan to ensure that there were tasks for volunteers to assist and an orderly plan for the staff to keep on task

Financial

- Work out what needs to be obtained
- Compile a budget for expenditure
- Don't trim, hoping for good deals, in case you can't negotiate
- Age the budget through the project
- Fundraise to ensure the money is available when needed
- Keep good records to help plan the next job

Time Records

- Keep a record of all efforts
- Volunteer input can be calculated to a dollar value and used as a lever to gain funding from outside agencies
- Records can assist in budgeting for the next project
- Be in a position to thank all those who helped

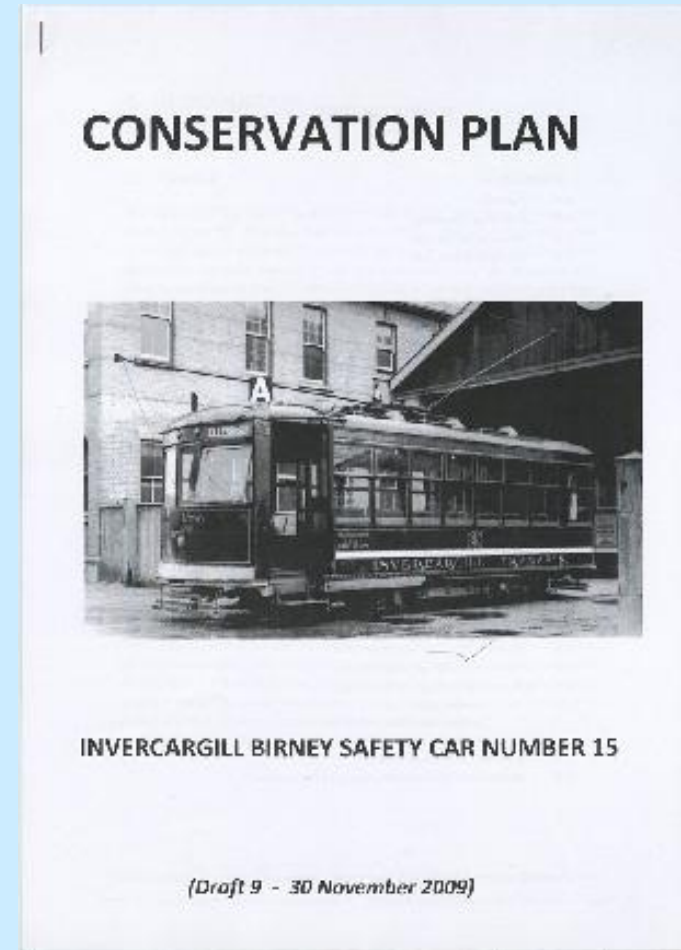
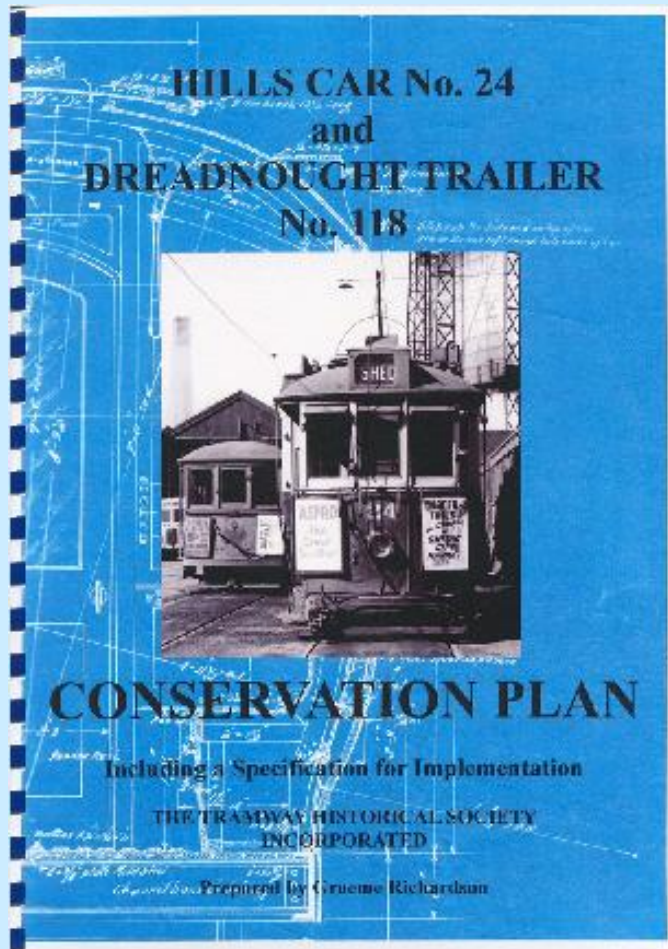
Why did we do it this way

I don't really know but here are a couple of possible reasons

- Amateurism: No knowledge of the way professional museums go about such projects
- History: we had always started projects and taken them to conclusion

**Would we do it
this way again?**

I don't think we would



From our conservation plans

- We will have direction
- Parts required will be quantified
- Budgets will be set
- Fundraising can be targeted
- Labour can be better utilised

Current Project



- Birney 15
- Restoration under way
- Working to Conservation plan
- At this stage on budget
- Working to a time schedule

Next Conference

**I hope to be
able to tell you
that the
planning did
work**

Christchurch No.26



- If you haven't had a chance to visit us please come and have a look at 26.
- A little notice and we can usually organise to show her off

Thanks to

- John Shanks for history
- Dave Hinman for photos and history
- Graeme Richardson for photos and technical advice